ABSTRACT

A device (5) for determining k representative of the magnitude A of an orthogonal component of a Quadrature Amplitude Modulation (QAM) symbol, including:

multi-stage binary search circuitry (21) for conducting a multi-stage binary search for the value of A between predetermined maximum and minimum values A_{max} and A_{min}, each stage producing a single bit binary output; and

integer value construction circuitry (22) for constructing the integer value k by juxtaposing the binary outputs from consecutive stages of the binary search,

where $W = (A_{max} - A_{min})/n$,

n equals 2^i and i is an integer,

A_{max} is a maximum detectable level of the magnitude A,

A_{min} is a minimum detectable level of the magnitude A, and

W is the incremental level between consecutive values of the integer value k.